

Remarks & Arguments

In the Office Action, the Examiner noted that Claims 1, 3, 4, 6-22 are pending in the application, and that Claims 1, 3, 4 and 6-22 are rejected. By this amendment, Claims 1, 7, 11, 13 and 14 have been amended, and Claims 8-10 have been canceled without prejudice. Thus, Claims 1, 3, 4, 6, 7 and 11-22 are pending in the application. The amendments to the claims do not add new matter to the application. The Examiner's rejections are traversed below.

Claim Objection

Claim 13 stands objected to because of a noted informality. Applicant has amended Claim 13 in accordance with the Examiner's direction.

Rejections Under 35 U.S.C. 102

Claims 1, 7, 12-14 and 17-19 stand rejected under 35 U.S.C. 102 as being anticipated by U.S. Patent No. 6,176,837 to Foxlin. Applicant respectfully traverses the rejection of the claims on the basis that Foxlin does not disclose each and every element as set forth in the independent claims 1, 7 and 14 as amended.

Claim 1, as amended, recites "a speaker at a fixed location for automatically transmitting a given signal combined with one or more other signals, wherein said given signal has a given frequency above an audible range and said other signals have frequencies in the

audible range.” In contrast, Foxlin discloses that: “Each ultrasonic beacon 122 sends an ultrasonic pulse 114 in response to infra-red command signal 112 sent from tracking device 100. In particular, each URM 110 on tracking device 100 broadcasts infra-red (IR) signals 112 to all of the ultrasonic beacons 122. These IR signals include address information so that only one beacon, or a small number of beacons, recognize each IR signal as intended for it, and responds to the signal. In response to an IR signal, an addressed beacon immediately broadcasts an ultrasonic pulse that is then received by one or more URM 110. See col. 3, line 48-57; Fig 5; and col. 5, lines 45-63. Accordingly, Foxlin does not disclose “a speaker ... for automatically transmitting a given signal.” Instead, Foxlin specifically teaches that each ultrasonic beacon sends an ultrasonic pulse in response to an infra-red signal that includes an address the given ultrasonic beacon.

In addition, Claim 1 recites “a speaker at a fixed location for automatically transmitting a given signal combined with one or more other signals, wherein said given signal has a given frequency above an audible range and said other signals have frequencies in the audible range.” In contrast, Foxlin only discloses that the ultrasonic beacon sends an ultrasonic pulse. Furthermore, those skilled in the art would understand that an “ultrasonic beacon” would only transmit an ultrasonic signal and not any signals having frequencies in the audible range in the absence of a specific teaching in Foxlin. Accordingly, Foxlin does not disclose “a speaker ... for automatically transmitting a given [non-audible signal] combined with one or more other signals [in the audible range].”

For each of the reasons set forth above, Applicant respectfully submits that Claim 1 is patentable over Foxlin. Accordingly, Applicant requests that the anticipation rejection of Claim 1 be withdrawn and that Claim 1 be allowed.

Claim 7, as amended, recites “transmitting simultaneously a first non-audible signal from a first speaker and a second non-audible signal from a second speaker.” In contrast, Foxlin discloses that a single ultrasonic signal is transmitted from a given beacon, some time thereafter the same ultrasonic signal is transmitted from a different beacon. According, Foxlin does not disclose “transmitting **simultaneously** a first non-audible signal from a first speaker and a second non-audible signal from a second speaker.” Consequently, Foxline also does not disclose “receiving said first and second non-audible signals at a plurality of microphones,” “determining a delay for each of said received first and second non-audible signals for each of said plurality of microphones,” and/or “determining at least one of a relative position and a relative orientation of said plurality of microphones as a function of said determined delays [of said first and second non-audible signals].”

For each of the reasons set forth above, Applicant respectfully submits that Claim 7 is patentable over Foxlin. Accordingly, Applicant requests that the anticipation rejection of Claim 7 be withdrawn and that Claim 7 be allowed.

Claims 12 and 13 are allowable by virtue of their dependency on respective base Claim 7, as well as the additional elements they recite. Accordingly, Applicant respectfully requests that the anticipation rejection of Claims 12 and 13 be withdrawn and that Claims 12 and 13 be allowed.

Claim 14, as amended, recites “a plurality of speakers for transmitting one or more sound waves in the audible range, and wherein a first speaker automatically transmits a first signal at a first frequency above the audible range and a second speaker automatically transmits a second signal at a second frequency above the audible range substantially simultaneously with the first signal.” In contrast, Foxlin discloses that: “Each ultrasonic beacon 122 sends an ultrasonic pulse 114 in response to infra-red command signal 112 sent from tacking device 100. Foxlin further discloses that a single ultrasonic signal is transmitted from a given beacon, 1) some time thereafter 2) the same ultrasonic signal is transmitted from a different beacon. Consequently, Foxlin does not disclose “wherein a first speaker **automatically transmits** a first signal at a **first frequency** above the audible range and a second speaker **automatically transmits** a second signal **at a second frequency** above the audible range substantially **simultaneously with the first signal,**” Furthermore, Foxlin also does not disclose “a computing device coupled to control said speakers and coupled to receive said first and second signals from each of said plurality of microphones, said computing device for determining at least one of a relative position and a relative orientation of said assembly based on delay differences of said first and second signals received from each of said plurality of microphones,”

In addition, Foxlin does not disclose that the ultrasonic beacons transmit sound waves in the audible range. In contrast, Foxlin only discloses that the ultrasonic beacon sends an ultrasonic pulse. Furthermore, those skilled in the art would understand that an “ultrasonic beacon” would only transmit an ultrasonic signal and not any signals having frequencies in the audible range in the absence of a specific teaching in Foxlin.

For each of the reasons set forth above, Applicant respectfully submits that Claim 14 is patentable over Foxlin. Accordingly, Applicant requests that the anticipation rejection of Claim 14 be withdrawn and that Claim 14 be allowed.

Claims 17-19 are allowable by virtue of their dependency on respective base Claim 14, as well as the additional elements they recite. Accordingly, Applicant respectfully requests that the anticipation rejection of Claims 17-19 be withdrawn and that Claims 17-19 be allowed.

Rejections Under 35 U.S.C. 103

Claims 3, 4, 11 and 20-22 stand rejected under 35 U.S.C. 103 as being obvious in view of the combination of U.S. Patent No. 6,176,837 to Foxlin and U.S. Patent Application Publication No. 2002/0181723 to Kataoka.

With regard to **Claim 3**, Applicant respectfully submits that independent Claim 1 is patentable over Foxlin for each of the reasons set forth above. Kataoka is cited as teaching “wherein said signal comprises a marker and wherein said delay is determined as a function of a delay between said marker received by each of the plurality of microphones.” Thus, Kataoka does not add anything to the teachings of Foxlin with reference to Claim 1. In particular, neither Foxlin nor Kataoka teach or suggest “a speaker at a fixed location for [1)] automatically transmitting a given signal [2)] combined with one or more other signals, wherein said given signal has a given frequency above an audible range and said other signals have frequencies in the audible range.” Applicant therefore respectfully submits that Claim 3 is patentable over

Foxlin in view of Kataoka based upon its dependency on independent Claim 1. Accordingly, Applicant requests that the obviousness rejection of Claim 3 be withdrawn and that Claim 3 be allowed.

With regard to **Claim 4**, Applicant respectfully submits that independent Claim 1 is patentable over Foxlin for each of the reasons set forth above. Kataoka is cited as teaching “wherein said delay is determined as a function of a time delay between said signal received by each of said plurality of microphones.” Thus, Kataoka does not add anything to the teachings of Foxlin with reference to Claim 1. In particular, neither Foxlin nor Kataoka teach or suggest “a speaker at a fixed location for [1)] automatically transmitting a given signal [2)] combined with one or more other signals, wherein said given signal has a given frequency above an audible range and said other signals have frequencies in the audible range.” Applicant therefore respectfully submits that Claim 4 is patentable over Foxlin in view of Kataoka based upon its dependency on independent Claim 1. Accordingly, Applicant requests that the obviousness rejection of Claim 4 be withdrawn and that Claim 4 be allowed.

With regard to **Claim 11**, Applicant respectfully submits that independent Claim 7 is patentable over Foxlin for each of the reasons set forth above. Kataoka is cited as teaching “the signal comprising a sinusoidal signal.” Thus, Kataoka does not add anything to the teachings of Foxlin with reference to Claim 7. In particular, neither Foxlin nor Kataoka teach or suggest “transmitting simultaneously a first non-audible signal from a first speaker and a second non-audible signal from a second speaker.” Applicant therefore respectfully submits that Claim 11 is patentable over Foxlin in view of Kataoka based upon its dependency on independent Claim 7.

Accordingly, Applicant requests that the obviousness rejection of Claim 11 be withdrawn and that Claim 11 be allowed.

With regard to **Claim 20**, Applicant respectfully submits that independent Claim 14 is patentable over Foxlin for each of the reasons set forth above. Kataoka is cited as teaching “the signal comprising a sinusoidal signal.” Thus, Kataoka does not add anything to the teachings of Foxlin with reference to Claim 14. In particular, neither Foxlin nor Kataoka teach or suggest “a plurality of speakers for transmitting one or more sound waves in the audible range, and wherein a first speaker automatically transmits a first signal at a first frequency above the audible range and a second speaker automatically transmits a second signal at a second frequency above the audible range substantially simultaneously with the first signal.” Applicant therefore respectfully submits that Claim 20 is patentable over Foxlin in view of Kataoka based upon its dependency on independent Claim 14. Accordingly, Applicant requests that the obviousness rejection of Claim 20 be withdrawn and that Claim 20 be allowed.

With regard to **Claim 21**, Applicant respectfully submits that independent Claim 1 is patentable over Foxlin for each of the reasons set forth above. Kataoka is cited as teaching “wherein said signal comprises a marker and wherein said delay is determined as a function of a delay between said marker received by each of the plurality of microphones.” Thus, Kataoka does not add anything to the teachings of Foxlin with reference to Claim 1. In particular, neither Foxlin nor Kataoka teach or suggest “a speaker at a fixed location for [1)] automatically transmitting a given signal [2)] combined with one or more other signals, wherein said given signal has a given frequency above an audible range and said other signals have frequencies in

the audible range.” Applicant therefore respectfully submits that Claim 21 is patentable over Foxlin in view of Kataoka based upon its dependency on independent Claim 1. Accordingly, Applicant requests that the obviousness rejection of Claim 21 be withdrawn and that Claim 21 be allowed.

With regard to **Claim 22**, Applicant respectfully submits that independent Claim 1 is patentable over Foxlin for each of the reasons set forth above. Kataoka is cited as teaching “wherein said delay is determined as a function of a time delay of said signal received by each of said plurality of microphones relative to a reference signal .” Thus, Kataoka does not add anything to the teachings of Foxlin with reference to Claim 1. In particular, neither Foxlin nor Kataoka teach or suggest “a speaker at a fixed location for [1)] automatically transmitting a given signal [2)] **combined** with one or more other signals, wherein said given signal has a given frequency above an audible range and said other signals have frequencies in the audible range.” Applicant therefore respectfully submits that Claim 22 is patentable over Foxlin in view of Kataoka based upon its dependency on independent Claim 1. Accordingly, Applicant requests that the obviousness rejection of Claim 22 be withdrawn and that Claim 22 be allowed.

Claims 6, 15 and 16 stand rejected under 35 U.S.C. 103 as being obvious in view of the combination of U.S. Patent No. 6,176,837 to Foxlin and U.S. Patent Application Publication No. 2003/0142829 to Avigni.

With regard to **Claim 6**, Applicant respectfully submits that independent Claim 1 is patentable over Foxlin for each of the reasons set forth above. Avigni is cited as teaching that “said plurality of microphones communicate wirelessly with said computing device.” Thus,

Avigni does not add anything to the teachings of Foxlin with reference to Claim 1. In particular, neither Foxlin nor Avigni teach or suggest “a speaker at a fixed location for [1)] **automatically transmitting a given signal** [2)] **combined** with one or more other signals, wherein **said given signal has a given frequency above an audible range** and **said other signals have frequencies in the audible range.**” Applicant therefore respectfully submits that Claim 6 is patentable over Foxlin in view of Avigni based upon its dependency on independent Claim 1. Accordingly, Applicant requests that the obviousness rejection of Claim 6 be withdrawn and that Claim 6 be allowed.

With regard to **Claim 15**, Applicant respectfully submits that independent Claim 14 is patentable over Foxlin for each of the reasons set forth above. Avigni is cited as teaching that “said plurality of microphones communicate wirelessly with said computing device.” Thus, Avigni does not add anything to the teachings of Foxlin with reference to Claim 14. In particular, neither Foxlin nor Avigni teach or suggest “a plurality of speakers for transmitting one or more sound waves in the audible range, and **wherein a first speaker automatically transmits a first signal at a first frequency above the audible range and a second speaker automatically transmits a second signal at a second frequency above the audible range substantially simultaneously with the first signal.**” Applicant therefore respectfully submits that Claim 15 is patentable over Foxlin in view of Avigni based upon its dependency on independent Claim 14. Accordingly, Applicant requests that the obviousness rejection of Claim 15 be withdrawn and that Claim 15 be allowed.

With regard to **Claim 16**, Applicant respectfully submits that independent Claim 14 is patentable over Foxlin for each of the reasons set forth above. Foxlin is further cited as teaching “wherein said computing device is a game console.” Avigni is cited as teaching that “said plurality of microphones communicate wirelessly with said computing device.” Thus, neither Foxlin nor Avigni adds anything to the teachings of Foxlin that have already been relied upon with reference to Claim 1. In particular, neither Foxlin nor Avigni teach or suggest “a plurality of speakers for transmitting one or more sound waves in the audible range, and wherein a first speaker **automatically transmits** a first signal at a **first frequency** above the audible range and a second speaker **automatically transmits** a second signal at a **second frequency** above the audible range substantially **simultaneously with the first signal**.” Applicant therefore respectfully submits that Claim 16 is patentable over Foxlin in view of Avigni based upon its dependency on independent Claim 14. Accordingly, Applicant requests that the obviousness rejection of Claim 16 be withdrawn and that Claim 16 be allowed.

Conclusion


For all the reasons advanced above, Applicants respectfully submit that the present application is in condition for allowance and that action is earnestly solicited. The Examiner is invited to contact Applicants’ undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

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Amdt. Dated 10/10/07
Reply to Office Action of 7/12/07

The Commissioner is hereby authorized to charge any additional fees, which may be required for this amendment, or credit any overpayment, to Deposit Account 504160. In the event that an extension of time is required, or may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account 504160.

Respectfully submitted,
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